

Météorologique du France, viz, the twilight glows in October, 1902, the solar and lunar corona and diminution of radiation in December, 1902, and January, 1903. It is, then, surprising that various scientists, describing them in their turn some months later, or summarizing in 1904 the observations made at various places, have appeared to ignore completely the indications given in an official organ for French meteorology.

These indications were, it is true, very brief, as are those that I have just given, and it would certainly be interesting to publish our observations a little more in detail, as I hope to do soon.

But I desire now to point out the difference of intensity which exists, according to my observations, between the phenomena of 1883-1884 and those of 1902-1903. In 1883 (I then observed at Lyons), the twilight glows (the second segment) were more luminous and more prolonged, and the diffraction circles coronæ or anthelia, were much more brilliant and easy to see than in 1903.

THE SOLAR ECLIPSE OF AUGUST 30, 1905, AS VISIBLE IN THE UNITED STATES.

By WILLIAM FRANCIS RIGGE, S. J., Creighton University, Omaha, Nebr.

The solar eclipse of August 30, 1905, will, as is well known, be a total eclipse. But as the path of totality begins just outside of the United States, the eclipse becomes for us a partial one and occurs near the time of sunrise. A map of this eclipse specially constructed for the United States and showing

the varied degrees of obscuration attained in the different States, will, therefore, I trust, be of interest to the reader, and it is accordingly given herewith. (See Fig. 1). This eclipse map was constructed graphically according to the method explained by the writer in Popular Astronomy Nos. 32, 33, 34, of August, September, and October, 1896.

A great part of the sunrise oval lies across the United States. Its eastern branch entitled "Eclipse begins at Sunrise," its middle line showing the "Middle of the Eclipse at Sunrise," and its western branch on which the "Eclipse ends at Sunrise," are sufficiently intelligible not to need any explanation. The smaller ovals marked 2, 4, 6, 8, show the even tenths of obscuration, that is, of the sun's diameter obscured, at the moments of sunrise. For example, all along the oval 6 the sun rises six-tenths eclipsed, along the eastern branch of this oval the eclipse is increasing and along the western branch decreasing at this moment.

The system of lines approximately at right-angles to the middle of the eclipse line denotes every tenth of obscuration for the middle of the eclipse, or, in other words, the maximum obscuration.

A couple of examples will illustrate the use of the eclipse map. At Cincinnati, Ohio, the sun rises with an obscuration of 0.50, and this increases to 0.67. At Omaha, Nebr., the obscuration at sunrise is 0.56 and is diminishing.

The dotted lines marked V, VI, VII, at the bottom of the map, show the places at which sunrise occurs at 5, 6, 7, o'clock, central time. C is the point of first contact.

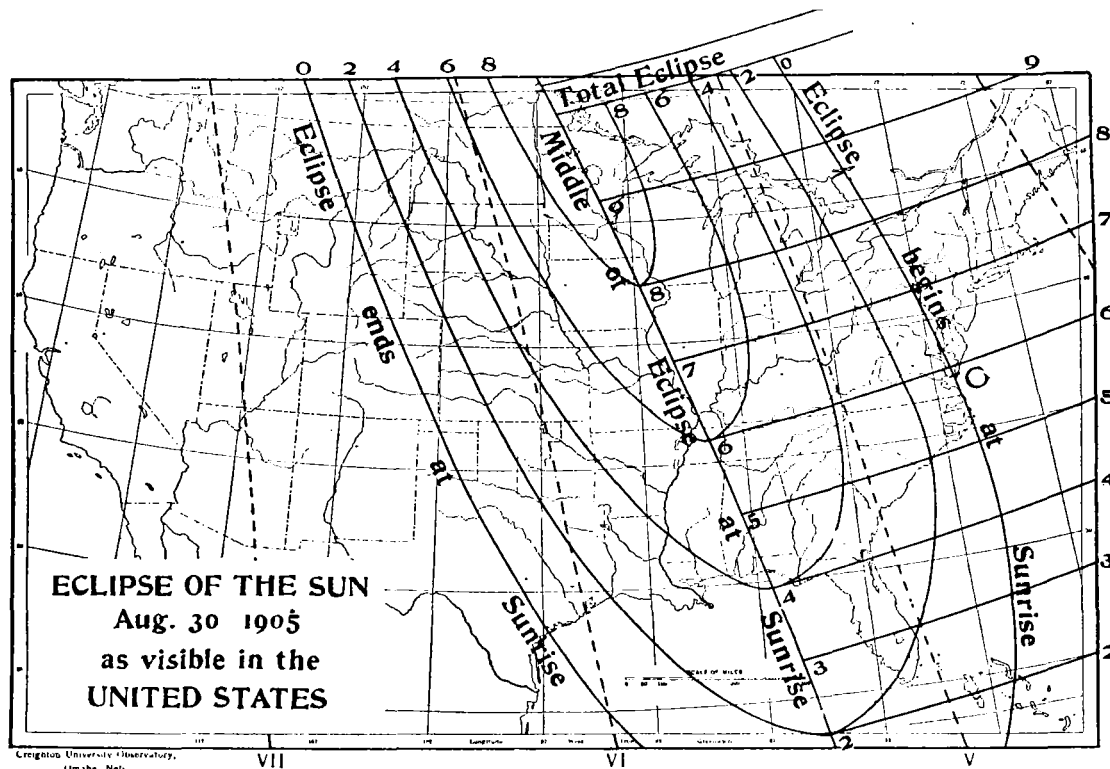


FIG. 1.—Map showing the degrees of obscuration in the different States.

NOTES AND EXTRACTS.

TORNADO NEAR BLUFF SPRINGS, FLA., MARCH 20, 1905.

Mr. William F. Reed, jr., observer at Pensacola, submits a report of a tornado near Bluff Springs, about 40 miles north of Pensacola, early in the morning of March 20. The morning weather map of that date shows an area of low pressure central near Meridian, Miss., with thunderstorms at Pensacola, Mobile, Meridian, Montgomery, and Nashville, and the follow-

ing heavy rainfalls were reported: Mobile, Ala., 9.20 inches; New Orleans, La., 5.48; Birmingham, Ala., 1.76; Montgomery, Ala., 1.50; Pensacola, Fla., 1.84; Nashville, Tenn., 1.16; Corpus Christi, Tex., 1.06.

Owing to the hour of occurrence, 4 a. m., and its brief duration, the storm was not generally noticed, so far as known. Mr. G. M. Gentry, whose residence was in the path of the storm, furnishes the accompanying sketch, fig. 1, showing

that portion of township 5, range 31, in which the tornado occurred. All of the houses shown were more or less damaged. Mr. Gentry states that the storm track was about two and one half miles in length, and about half a mile in width at his place.

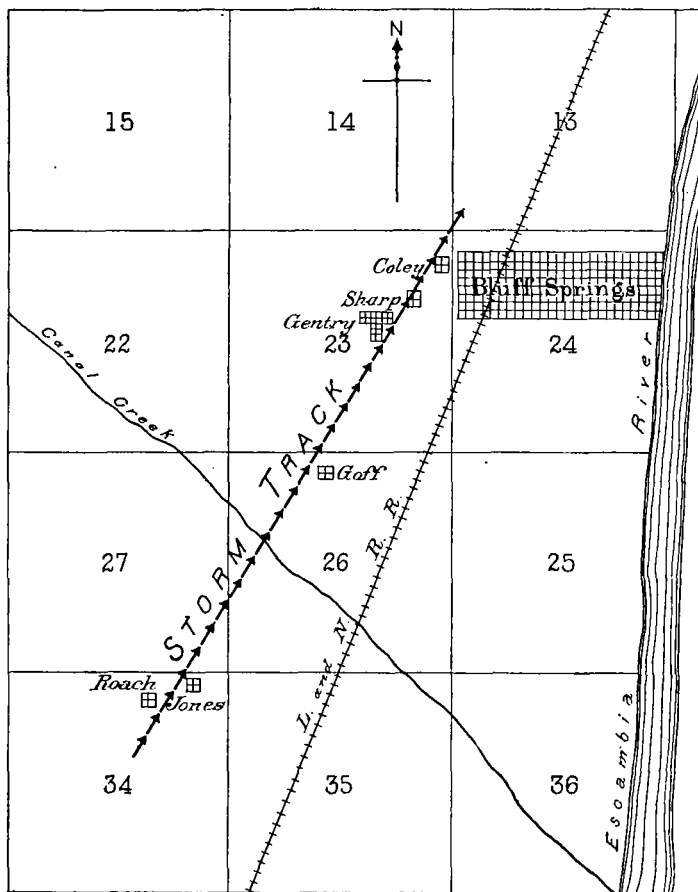


FIG. 1.—Track of tornado near Bluff Springs, Fla., March 20, 1905.

Looking over its pathway, I find that trees fell in every direction, tops lying every way; shade and fruit trees were uprooted and twisted off; in the woodland they were twisted and broken off. The debris shows plainly the whirling motion, and seems to extend to the outer edges of the storm's pathway. The wind that did the damage was just a puff of a few minutes. The lightning was terrific, and the thunder just a solid roar. No hail was noticed and the rainfall was less than one inch. I hear there was considerable damage across the river in Santa Rosa County.

WEATHER BUREAU BULLETINS WANTED.

Any one having copies of the following bulletins, that he can spare, will confer a favor by forwarding them to the Library of the U. S. Weather Bureau, Washington, D. C.:

- No. 23. Hammon, William H. Frost: When to Expect it and How to Lessen the Injury Therefrom. 1899.
- No. 29. McAdie, Alexander G. Frost Fighting. 1900.

WEATHER BUREAU MEN AS INSTRUCTORS.

Mr. Alexander McC. Ashley, Section Director, Honolulu, H. I., on March 17 addressed the Research Club of Honolulu on "Weather Bureau Methods and Instruments." The subject was treated in a popular manner, the chief aim being to describe clearly the various lines of work now being carried on by the Bureau.

Mr. Joseph L. Cline, Observer, Corpus Christi, Tex., whose appointment as instructor in meteorology in the high school of that city has already been mentioned, has been giving one lecture each week during the last four months to the student, at the office of the Weather Bureau. These lectures on meteorology have included climatology, the effects of climate on plant growth and the human organism, and the applications of physics, thermodynamics, and hydrodynamics in general to the problems of the atmosphere. Mr. Cline prefers to emphasize the connection of meteorology with physics rather than to teach the subject as a branch of physical geography.

Mr. Norman B. Conger, Inspector, Detroit, Mich., reports that a number of classes from the central and eastern high schools came to the office at different times during March and were instructed in meteorological subjects. The classes in physical geography frequently come to the office at different periods and are addressed either by Mr. Conger or by Mr. C. D. C. Thompson.

Prof. Henry J. Cox, Chicago, Ill., lectured during March before the following associations:

- March 15. Steel Works Scientific Club, Joliet, Ill.
- March 16. Paint and Oil Association, Chicago, Ill.
- March 24. Society of Sons of the American Revolution, Chicago, Ill.
- March 27. Men's Club of Fullerton Avenue Church, Chicago, Ill.
- March 28. Men's League of Eggleston Baptist Church, Chicago, Ill.

Much interest is taken in these lectures, which are devoted to the general subject of weather and weather forecasting.

Mr. William M. Dudley, Observer, Scranton, Pa., reports that 135 pupils from the schools of that city, including the Dunmore and Scranton high schools and the Young Men's Christian Association class in physics, visited the office on six different occasions during March. Mr. F. A. Magrum, Assistant Observer, explained to them the movement of storms, the work of the Weather Bureau, and the construction and use of instruments.

Mr. William F. Reed, jr., Observer, Pensacola, Fla., reports that classes from the high school visited the office on March 14, 16, and 17, and received instruction in meteorology. In explaining the anemometer and sunshine recorder, practical demonstrations were given by placing the extra instruments in circuit with a battery and single register. Mr. Reed also lectured at the high school on the following dates:

- March 2, on "The Atmosphere; its Elasticity, Composition, Pressure, and Height."
- March 24, on "Climate." Drawings enlarged from textbook diagrams were used for illustration.
- March 28, on "Winds and Storms."

Mr. J. Warren Smith, Section Director, Columbus, Ohio, reports giving an illustrated lecture on March 9 before the Young Men's Christian Association of Columbus; a short address on "The Weather Bureau and the Telephone," on March 30; and a popular lecture on "Meteorology," April 28. His regular course of instruction in meteorology at the Ohio State University begins on April 6, and over thirty students have registered for this course.